

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of Species 1, claim 4 in the reply filed on 10/9/08 is acknowledged. Claims 5, 6, and 8-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species 2 and 3, there being no allowable generic or linking claim.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statements (IDS) submitted on 1/7/05 and 3/4/08 were filed on 1/7/05 and 3/4/08. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

***Drawings***

4. The drawings filed on 1/7/05 are accepted by the examiner.

***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 7, and 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sakamoto et al (US 2004/0157111).

Regarding claims 1-3, 16, and 17, the Sakamoto reference discloses a fuel cell and a method of making a fuel cell comprising: preparing an electrode membrane structural body provided with: an electrolyte membrane "1"; a pair of gas diffusion layers "4" & "5" formed on both surfaces of the electrolyte membrane and serving as electrodes; and sandwiching the electrode membrane structural body between a pair of separators "10" each which has gas flow channels that allow gas to be supplied to associated one of the pair of gas diffusion layers, wherein each of the pair of separators has a convex portion "20" formed at the area outside the gas flow channels, and

wherein the convex portion is held in pressure contact with the associated one of the pair of gas diffusion layers (See Figures 1 & 2 and paragraph [0045]). Examiner's note: It is inherent that when the convex portion compresses the gas diffusion layers, the porosity of the associated one of the pair of gas diffusion layers at an area outside the gas flow channels is lower than a porosity of the associated one of the pair of gas diffusion layers at an area facing the gas flow channels.

Regarding claim 7, it also discloses a convex portion that surrounds the gas flow channels (See Figure 1).

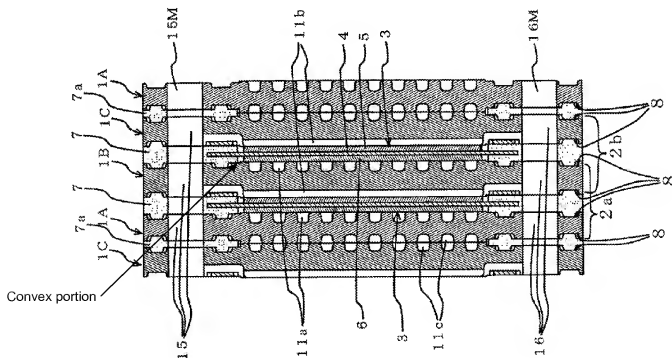
Regarding claim 14, it is noted that the instant claim is being construed as product-by-process and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. The final fuel cell assembly has gas diffusion layers at the area outside the gas flow channels that are compressed, regardless of whether the gas diffusion layers were preliminarily compressed.

Regarding claim 15, it is inherent that the porosity of the associated one of the pair of gas diffusion layers is distributed in surface symmetry with respect to the electrolyte membrane.

8. Claims 1-4, 7, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Okazaki (US 2001/0018143).

Regarding claims 1-3, 16, and 17, the Okazaki reference discloses a fuel cell and a method of making a fuel cell comprising: preparing an electrode membrane structural body "3" provided with: an electrolyte membrane "4"; a pair of gas diffusion layers "5" &

"6" formed on both surfaces of the electrolyte membrane and serving as electrodes; and sandwiching the electrode membrane structural body between a pair of separators "1B" & "1C" each which has gas flow channels that allow gas to be supplied to associated one of the pair of gas diffusion layers, wherein each of the pair of separators has a convex portion "20" formed at the area outside the gas flow channels, and wherein the convex portion is held in pressure contact with the associated one of the pair of gas diffusion layers by fastening the components together with bolts and nuts (See Figure 1 below and paragraph [0044],[0045],[0066]). Examiner's note: It is inherent that when the convex portion compresses the gas diffusion layers, the porosity of the associated one of the pair of gas diffusion layers at an area outside the gas flow channels is lower than a porosity of the associated one of the pair of gas diffusion layers at an area facing the gas flow channels.



Regarding claim 4, it also discloses a corner of the convex portion that is formed in a round portion (See Figure 1).

Regarding claim 7, it also discloses a convex portion that surrounds the gas flow channels (See Figure 1).

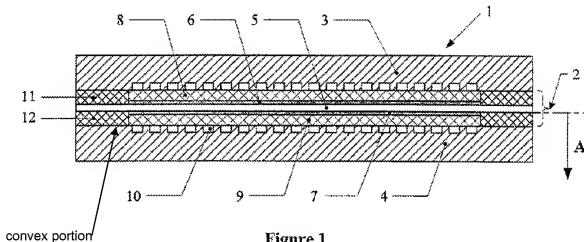
Regarding claim 14, it is noted that the instant claim is being construed as product-by-process and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. The final fuel cell assembly has gas diffusion layers at the area outside the gas flow channels that are compressed, regardless of whether the gas diffusion layers were preliminarily compressed.

Regarding claim 15, it is inherent that the porosity of the associated one of the pair of gas diffusion layers is distributed in surface symmetry with respect to the electrolyte membrane.

9. Claims 1-3, 7, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Zuber et al (US 2002/0051901).

Regarding claims 1-3, 16, and 17, the Zuber reference discloses a fuel cell and a method of making a fuel cell comprising: preparing an electrode membrane structural body "2" provided with: an electrolyte membrane "5"; a pair of gas diffusion layers "8" & "9" formed on both surfaces of the electrolyte membrane and serving as electrodes; and sandwiching the electrode membrane structural body between a pair of separators "3" & "4" each which has gas flow channels that allow gas to be supplied to associated one of the pair of gas diffusion layers, wherein each of the pair of separators has a convex

portion formed at the area outside the gas flow channels, and wherein the convex portion is held in pressure contact with the associated one of the pair of gas diffusion layers (See Figure 1 and paragraph [0030],[0031]). Examiner's note: It is inherent that when the convex portion compresses the gas diffusion layers, the porosity of the associated one of the pair of gas diffusion layers at an area outside the gas flow channels is lower than a porosity of the associated one of the pair of gas diffusion layers at an area facing the gas flow channels.



**Figure 1**

Regarding claim 7, it also discloses a convex portion that surrounds the gas flow channels (See Figure 1).

Regarding claim 14, it is noted that the instant claim is being construed as product-by-process and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. The final fuel cell assembly has gas diffusion layers at the area outside the gas flow channels that are compressed, regardless of whether the gas diffusion layers were preliminarily compressed.

Regarding claim 15, it is inherent that the porosity of the associated one of the pair of gas diffusion layers is distributed in surface symmetry with respect to the electrolyte membrane.

10. Claims 1-3, and 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al (WO02/23655) using (US 7,001,688) as an equivalent English translation.

Regarding claims 1-3, 16, and 17, the Ito reference discloses a fuel cell and a method of making a fuel cell comprising: preparing an electrode membrane structural body "2" provided with: an electrolyte membrane "5"; a pair of gas diffusion layers "4" formed on both surfaces of the electrolyte membrane and serving as electrodes; and sandwiching the electrode membrane structural body between a pair of separators "25" each which has gas flow channels that allow gas to be supplied to associated one of the pair of gas diffusion layers, wherein each of the pair of separators has a convex portion "26" formed at the area outside the gas flow channels, and wherein the convex portion is held in pressure contact with the associated one of the pair of gas diffusion layers (See Figures 1 and 5 and column 3 line 15 to column 4 line 52). Examiner's note: It is inherent that when the convex portion compresses the gas diffusion layers, the porosity of the associated one of the pair of gas diffusion layers at an area outside the gas flow channels is lower than a porosity of the associated one of the pair of gas diffusion layers at an area facing the gas flow channels.

Regarding claim 14, it is noted that the instant claim is being construed as product-by-process and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product

does not depend on its method of production. The final fuel cell assembly has gas diffusion layers at the area outside the gas flow channels that are compressed, regardless of whether the gas diffusion layers were preliminarily compressed.

Regarding claim 15, it is inherent that the porosity of the associated one of the pair of gas diffusion layers is distributed in surface symmetry with respect to the electrolyte membrane.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571)272-0717. The examiner can normally be reached on M-F, 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a



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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC

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